

IN THE CLAIMS:

Please cancel claims 15, ~~28~~. Please add new claims 29-42. Please amend claim 1 as shown in Appendix A. Pending claims 1-14 and 29-42 are as follows based on the amendment herein.

1. (AMENDED) An electronic structure, comprising:

a substrate layer that includes a first electronic device;

a passivating layer on the substrate layer and in mechanical contact with the substrate layer, wherein the passivating layer is on the first electronic device and is in mechanical contact with the first electronic device;

a first insulative layer on the passivating layer and in mechanical contact with the passivating layer;

a first damascene conductive wire/stud having a lower portion in the first insulative layer and an upper portion above the first insulative layer;

a subtractive etch metallic cap on the upper portion of the first damascene conductive wire/stud and in conductive contact with the first damascene conductive wire/stud;

a second insulative layer on the first insulative layer, wherein the second insulative layer covers the subtractive etch metallic cap; and

a damascene conductive wiring line structure within the second insulative layer such that the damascene conductive wiring line structure is above the subtractive etch metallic cap and is conductively coupled to the subtractive etch metallic cap.

2. The electronic structure of claim 1, wherein the lower portion of the first damascene conductive wire/stud is conductively coupled to a first portion of the first electronic device.

3. The electronic structure of claim 2, further comprising a second damascene conductive wire/stud having a lower portion in the first insulative layer and an upper portion above the first insulative layer, wherein the lower portion of the second damascene conductive wire/stud is conductively coupled to a second portion of the first electronic device, and wherein the subtractive etch metallic cap is in conductive contact with the second damascene conductive wire/stud.

4. The electronic structure of claim 3, wherein the first electronic device is a field effect transistor (FET), wherein the first portion of the first electronic device includes a gate of the FET, and wherein the second portion of the first electronic device is selected from the group consisting of a source of the FET and a drain of the FET.

5. The electronic structure of claim 2, wherein the first electronic device is selected from the group consisting of an MOS capacitor, a resistor, an inductor, a charged coupled device, and a light emitting diode.

6. The electronic structure of claim 2, wherein the substrate layer further comprises a second electronic device, and wherein the electronic structure further comprises:

a second damascene conductive wire/stud having a lower portion in the first insulative

layer and an upper portion above the first insulative layer, wherein the lower portion of the second damascene conductive wire/stud is conductively coupled to the second electronic device; and

a damascene conductive wiring line within the second insulative layer, wherein the damascene conductive wiring line is above the second damascene conductive wire/stud and is insulatively isolated from the second damascene conductive wire/stud.

7. The electronic structure of claim 6, further comprising a second subtractive etch metallic cap on the upper portion of the second damascene conductive wire/stud and in conductive contact with the second damascene conductive wire/stud.

8. The electronic structure of claim 1, wherein the substrate includes a shallow trench isolation (STI), and wherein the lower portion of the first damascene conductive wire/stud is on the STI.

9. The electronic structure of claim 1, further comprising:

a second subtractive etch metallic cap on the first insulative layer; and

a dual damascene within the second insulative layer such that the dual damascene is above the second subtractive etch metallic cap and is conductively coupled to the second subtractive etch metallic cap.

10. The electronic structure of claim 1, wherein the subtractive etch metallic cap has a thickness between about 50 nm and about 300 nm.

11. The electronic structure of claim 1, wherein the subtractive etch metallic cap includes an electrically conductive material selected from the group consisting of tungsten, tantalum, titanium nitride, aluminum with copper doping, tantalum nitride, tungsten nitride, gold, silver, platinum, copper, palladium, and combinations thereof.

12. The electronic structure of claim 1, wherein the first damascene conductive wire/stud includes an internal seam or void oriented lengthwise within the first damascene conductive wire/stud.

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13. The electronic structure of claim 1, wherein the subtractive etch metallic cap includes a first electrically conductive material, and wherein the first damascene conductive wire/stud includes a second electrically conductive material which differs from the first electrically conductive material.

14. The electronic structure of claim 13, wherein the first electrically conductive material is selected from the group consisting of tungsten, tantalum, titanium nitride, aluminum with copper doping, tantalum nitride, tungsten nitride, gold, silver, platinum, copper, palladium, alloys thereof, and combinations thereof, and wherein the second electrically conductive material is selected from the group consisting of polysilicon, tungsten, aluminum, copper, tantalum, and titanium nitride, alloys thereof, and combinations thereof.

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29. (NEW) The electronic structure of claim 1, wherein the subtractive etch metallic cap includes

an electrically conductive material selected from the group consisting of tungsten, tantalum, titanium nitride, aluminum with copper doping, tantalum nitride, tungsten nitride, copper, and combinations thereof.

16 30. (NEW) The electronic structure of claim 1, wherein the distance between a top surface of the first damascene conductive wire/stud and a top surface of the first insulative layer is between about 100 nm and about 400 nm.

17 31. (NEW) The electronic structure of claim 1, wherein the first insulative layer has a thickness that is greater than 250 nm.

18 32. (NEW) The electronic structure of claim 1, further comprising a passivating film disposed between the first insulative layer and the second insulative layer.

19 33. (NEW) The electronic structure of claim 32, wherein the passivating film is in contact with the subtractive etch metallic cap.

20 34. (NEW) The electronic structure of claim 1, wherein the damascene conductive wiring line structure comprises a damascene conductive wiring line and a conductive liner formed on sides of the damascene conductive wiring line.

21 35. (NEW) The electronic structure of claim 1, wherein the damascene conductive wiring line

structure together with the subtractive etch mechanical cap and the first damascene conductive wire/stud are adapted to collectively couple the first electronic device to other conductive structure in interlevel dielectric layers which are at or above the damascene conductive wiring line structure.

22 36. (NEW) The electronic structure of claim 1, wherein the damascene conductive wiring line structure comprises a dual damascene in contact with the subtractive etch metallic cap.

23 37. (NEW) The electronic structure of claim 3, wherein the damascene conductive wiring line structure comprises a dual damascene in contact with the subtractive etch metallic cap.

24 38. (NEW) The electronic structure of claim 1, wherein the passivating layer comprises a material selected from the group consisting of silicon nitride and silicon carbide.

25 39. (NEW) The electronic structure of claim 1, wherein the first insulation layer comprises a material selected from the group consisting of phososilicate glass and borophososilicate glass.

26 40. (NEW) The electronic structure of claim 1, wherein the first insulation layer has a thickness between about 0.2 microns and about 1.5 microns.

27 41. (NEW) An electronic structure, comprising:
a substrate layer that includes a first electronic device;

a first insulative layer on the passivating layer and in mechanical contact with the passivating layer, wherein the first insulation layer has a thickness between about 0.2 microns and about 1.5 microns;

a first damascene conductive wire/stud having a lower portion in the first insulative layer and an upper portion above the first insulative layer;

a subtractive etch metallic cap on the upper portion of the first damascene conductive wire/stud and in conductive contact with the first damascene conductive wire/stud;

a second insulative layer on the first insulative layer, wherein the second insulative layer covers the subtractive etch metallic cap; and

a damascene conductive wiring line structure within the second insulative layer such that the damascene conductive wiring line structure is above the subtractive etch metallic cap and is conductively coupled to the subtractive etch metallic cap.

28 42. (NEW) An electronic structure, comprising:

a substrate layer that includes a first electronic device;

a first insulative layer on the passivating layer and in mechanical contact with the passivating layer, wherein the first insulation layer comprises a material selected from the group consisting of phososilicate glass and borophososilicate glass;

a first damascene conductive wire/stud having a lower portion in the first insulative layer and an upper portion above the first insulative layer;

a subtractive etch metallic cap on the upper portion of the first damascene conductive wire/stud and in conductive contact with the first damascene conductive wire/stud;